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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,911	03/12/2001	Eric B. Allen	58207.000004	7159

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EXAMINER

MORAN, MARJORIE A

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,911

Applicant(s)

ALLEN ET AL.

Examiner

Marjorie A. Moran

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/26/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/17/04 has been entered. Claims 1-13 are pending.

All rejections and objections not reiterated below are hereby withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-5, and 7-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Amended claim 1 recites "concepts adapted to inherit from other concepts and capable of joining other concepts." It is unclear whether applicant intends "concepts adapted to inherit from other concepts **and** concepts capable of joining other concepts" or intends "concepts adapted to inherit from other concepts **which are also** capable of joining other concepts," therefore the claim is indefinite. It is noted that concepts which can both join other concepts and simultaneously inherit from other concepts may be new matter as such concepts are not supported by the originally filed specification or claims; however, as it is unclear what limitation applicant actually intends, the claims are rejected herein only for indefiniteness. For purposes of search and applying the prior art,

Art Unit: 1631

the examiner interprets the claim to recite concepts with separate properties, as set forth in the original claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1, 4-5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by KARP et al. (IDS ref: ISMB-96, pp. 116-124).

KARP teaches a system comprising a database comprising cellular components and reactions, and an inference engine for generating chemical reactions, wherein the inference engine is linked to the database (p. 118). KARP teaches that his database may comprise metabolic pathways (i.e. cellular events, which are defined as "concepts"), and that pathways may inherit from (i.e. be a result of) or include other pathways, or may be joined to other pathways (Figure 3), thus anticipating claims 1 and 4. KARP teaches that pathways may also be excluded (p. 118), thus anticipating claim 5. KARP's

Art Unit: 1631

concepts (pathways) are associated with particular organisms (species), as set forth on pages 120-122, therefore claims 7-8 are anticipated.

Applicant argues that KARP does not teach concepts which are capable of joining other pathways, as now recited in amended claim 1. The previous office actions stated, in the body of the rejection, that KARP anticipated the limitations of original claim 6 (joining of concepts); however, claim 6 was not included in the list of rejected claims due to a typographical error. The examiner regrets the error and subsequent confusion, but maintains that KARP anticipates the claims, as set forth above.

Claims 1, 4-5, and 7-13 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by THALHAMMER-REYERO (US 5,930,154).

THALHAMMER-REYERO teaches a system comprising a database of cellular reactions (Figure 1) linked to an inference engine to "dynamically simulate" intra- and intercellular pathways (i.e. concepts; col. 5, lines 16-20 and col. 6, lines, 38-43) wherein such pathways may be those of signal transduction (col. 14, lines 64-68).

THALHAMMER-REYERO teaches that his system may comprise biochemical information, may simulate cross-talk between pathways; i.e. that concepts may be joined, and may comprise concepts which are linked in a particular order (i.e. which "inherit") from each other (col. 14, line 64-col. 15, line 3 and Figure 1), thus anticipating claims 1 and 9. THALHAMMER-REYERO further teaches that his concepts may comprise other concepts and, by showing the separation of concepts, necessarily teaches that some concepts exclude other concepts (e.g. the cell of Figure 1 includes other concepts; the nucleus excludes other concepts within the cell), therefore claims 4 and 5 are anticipated. THALHAMMER-REYERO teaches that his system may comprise pathological conditions within physiological spaces and time intervals (col. 6, lines 25-

Art Unit: 1631

44), thus anticipating claims 7-8 and 10-11. THALHAMMER-REYERO further teaches that his system may include information pertaining to cells and cellular interactions (i.e. a cellular environment), and reaction rates (col. 11, lines 2-10), thus anticipating claims 12-13.

Applicant argues in the response filed 2/17/04 that THALHAMMER-REYERO does not teach concepts which inherit from other concepts, as now recited in amended claim 1. In light of the definition of "inheritance" set forth on page 13 of the specification (a particular cell type is "inherited" from a generic cell), a further review of THALHAMMER-REYERO revealed that he does teach inheritance of concepts from other concepts (e.g. Figure 1 shows a more differentiated cell which is "inherited" from a "parent"), thus the amended claims are anticipated.

Claims 1, 4-5, 7-8, 11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by KARP et al. (IDS ref: Nucleic Acids Research (1997) vol. 25, no. 1, pp. 43-50).

KARP teaches a database which may be changed by a user (i.e. dynamic) which comprises information relating to the genome and metabolic reactions of E. coli (abstract). KARP specifically teaches interactive entry of information into his database (p. 48). KARP's database includes concepts (biological objects), reactions, events (pathways), and attributes (pp. 44-45). KARP teaches that his objects may be joined (related objects), may inherit from other concepts (genes coding for an enzyme), and may contain other concepts (enzymatic reaction contains substructures), as in Figure 2, thus claims 1 and 4 are anticipated. KARP teaches that his concepts may exclude other concepts (e.g. the class of genes excludes polypeptides; see p. 47), thereby anticipating claim 5. KARP teaches that attributes may comprise location and molecular weight; i.e.

Art Unit: 1631

size, (p. 45) and that his pathways comprise various reaction conditions (Figure 3 and p. 48), thus anticipating claims 7-8, 11, and 13.

Conclusion

Claims 1, 4-5 and 7-13 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Mon. to Wed, 7:30-4; Thurs 7:30-6; Fri 7-1 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571)272-0722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marjorie A. Moran
Primary Examiner
Art Unit 1631

Marjorie A. Moran
9/3/04